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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
|-----------------|-------------|----------------------|---------------------|------------------|

10/574,879

01/19/2007

Peter Rehbein

10191/4552

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01/11/2008

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EXAMINER

LAVILLA, MICHAEL E

ART UNIT

PAPER NUMBER

1794

MAIL DATE

DELIVERY MODE

01/11/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary**

Application No.

10/574,879

Applicant(s)

REHBEIN ET AL.

Examiner

Michael La Villa

Art Unit

1794

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 6 April 2006 (Preliminary Amendment).
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 9-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 9-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 April 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 20060406.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Specification***

1. The substitute specification filed 6 April 2006 has been entered.

### ***Double Patenting***

2. Applicant is advised that should claim 9 be found allowable, claim 16 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).
3. Claims 9 and 16 appear to only differ in terms of minor grammatical changes, rendering the claimed subject matter to be substantially duplicative.

### ***Claim Objections***

4. Claim 13 is objected to because of the following informalities: In Claim 13, line 2, the word "statistically" is misspelled. In Claim 15, line 1, the word "graphite" is misspelled. Appropriate correction is required.

### ***Drawings***

5. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the anisotropic disposition of the graphite particles along the habitus plane must be shown or the feature(s) canceled from the claim(s). At page 5, lines 6-9 of the Specification, it is explained that anisotropic disposition of graphite particles along the habitus

plane is demonstrated by Figure 1, but it is unclear how this is evidenced in Figure 1. No new matter should be entered.

6. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:
8. The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 13 and 15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
10. Regarding Claim 13, it is unclear what kind of arrangement is being claimed. Is this a particle number distribution or an particle orientation distribution that is to be either anisotropic or statistical? It is unclear what aspect of Figure 1 depicts anisotropic distribution along a habitus plane of Ag layer, despite supposedly depicting such distribution.
11. Regarding Claim 15, it is unclear what is meant by the phrase "the graphic particles do not simultaneously include a maximum thickness and a maximum width." It is unclear what is a "maximum thickness" and a "maximum width" as these terms are not defined. It is unclear whether the condition pertains to individual particles or to the ensemble of particles. It is unclear what is the relationship, if any, to width and/or thickness of Claim 15 and length of Claim 9.

***Claim Rejections - 35 USC § 102***

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:
  13. A person shall be entitled to a patent unless –
  14. (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
15. Claims 9-16 are rejected under 35 U.S.C. 102(b) as being anticipated by  
Shinohara et al. USPN 5,199,553. Shinohara et al. teaches a contact surface for electrical contact, a 7 micron thick Ag layer being situated on a copper-based

substrate, which has been deposited with the aid of galvanic methods and includes finely dispersed graphite particles, which have a length of 0.5 to 2 microns and a thickness and width of 0.2 to 0.5 microns. See Shinohara et al. (Abstract; col. 2, lines 35-47; col. 2, line 66 through col. 3, line 23; col. 5, line 54 through col. 6, line 54; col. 14, line 57 through col. 16, line 49; col. 17, line 64 through col. 20, line 34; and Claims 1-3). The density of Ag is 10.5g/cm<sup>3</sup>; the density of graphite is 2.25g/cm<sup>3</sup>. Therefore, 6% vol. of graphite dispersed in the Ag matrix is the same as approximately 1.35 % wt. of graphite dispersed in the Ag matrix. The particles of the graphite powder appear to have random length, thickness and width and distribution in the silver layer (Figure 19), and so the subject matter of Claims 12, 13, and 15 would be expected to be satisfied in the exemplified articles. Furthermore, the electroplating method of Shinohara et al. would be expected to disperse the graphite particles in the Ag matrix in an anisotropic/statistical manner.

***Claim Rejections - 35 USC § 103***

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

17. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

18. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over


Shinohara et al. USPN 5,199,553 in view of Ricketts et al. USPN 5,967,860.

Shinohara et al. is relied upon as above. While Shinohara et al. teaches that the contact of Shinohara may be used in a wide variety of applications, Shinohara et al. does not specifically teach using the contact of Shinohara in an automotive plug connection. Ricketts et al. discloses the use of a contact surface having a composition and structure similar to that of Shinohara et al. in automotive plug connections in close proximity to the engine. Ricketts teaches coating copper substrate with silver alloy coating that comprises carbon. See Ricketts et al. (Abstract; col. 1, line 5 through col. 2, line 67; and col. 5, lines 30-49). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the contact of Shinohara in an automotive application suggested by Ricketts, since the contacts of Shinohara are disclosed as useful in a wide variety of applications and since Ricketts suggests comparable contact structures are specifically useful in automotive applications.

#### **Conclusion**

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael La Villa whose telephone number is (571) 272-1539. The examiner can normally be reached on Monday through Friday.
20. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on (571) 272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.
21. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Michael La Villa  
31 December 2007

  
MICHAEL E. LAVILLA PH.D.  
PRIMARY EXAMINER